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**Calman et al.**

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(54) **TAPE PRODUCT DISPENSER AND METHOD OF USING A TAPE PRODUCT DISPENSER**

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(51) **Int. Cl.**

| | |
|---|---|
| ***B65H 35/00*** | (2006.01) |
| ***B65H 75/14*** | (2006.01) |
| ***B65H 16/00*** | (2006.01) |
| ***B65H 49/20*** | (2006.01) |
| ***B65H 75/30*** | (2006.01) |
| ***B65H 75/32*** | (2006.01) |

(52) **U.S. Cl.**

CPC ..... ***B65H 35/0033*** (2013.01); ***B65H 16/005*** (2013.01); ***B65H 49/205*** (2013.01); ***B65H 75/305*** (2013.01); ***B65H 75/32*** (2013.01); *B65H 2701/377* (2013.01)

(58) **Field of Classification Search**

CPC .. B65H 35/0033; B65H 75/32; B65H 75/305; B65H 49/205; B65H 16/005; B65H 2701/377

See application file for complete search history.

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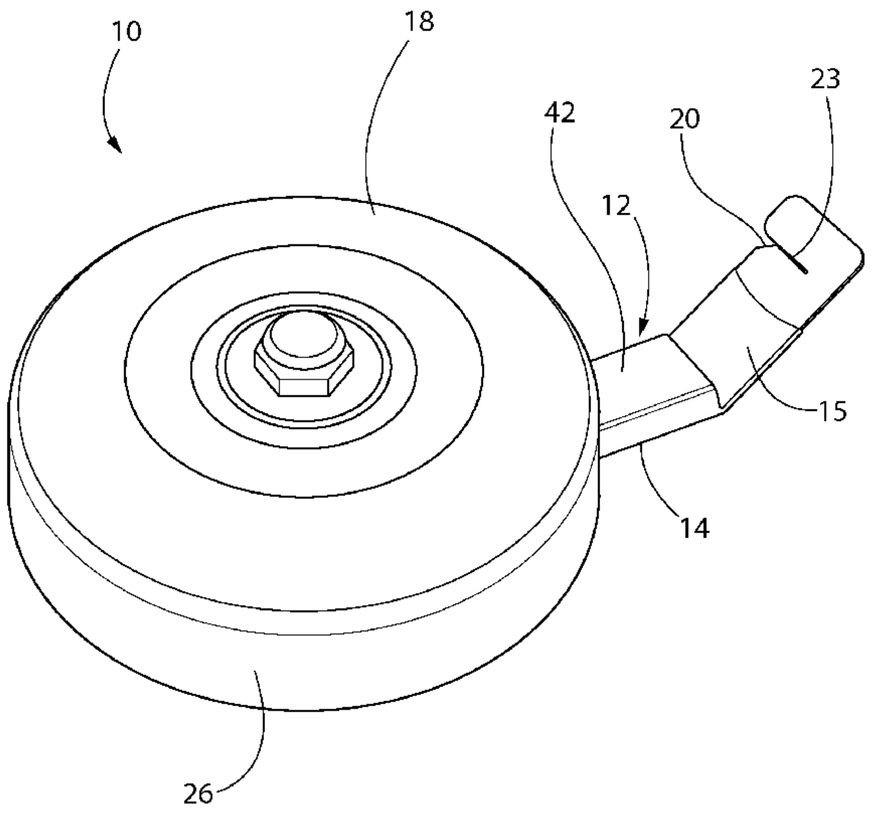
(57) **ABSTRACT**

A tape product dispenser and method of using a tape product dispenser are provided. The tape product dispenser includes a reel member comprising an internal loading surface for loading a tape product and a housing. The housing comprises a lower portion and a housing port disposed at a radially outer end of the housing. The lower portion is coupled to the reel member for rotation of the reel member relative to the lower portion.

**16 Claims, 8 Drawing Sheets**



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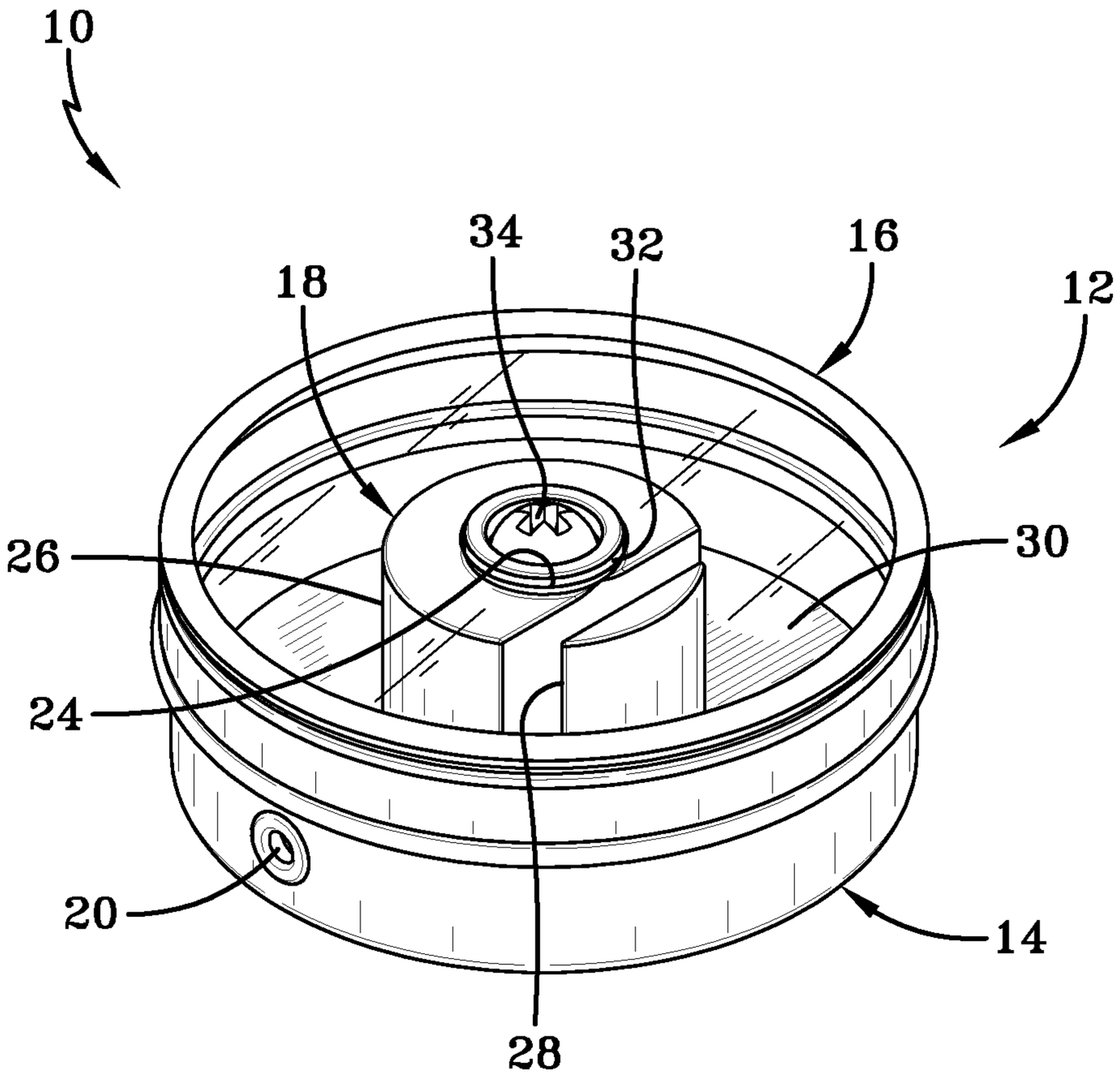


FIG. 1

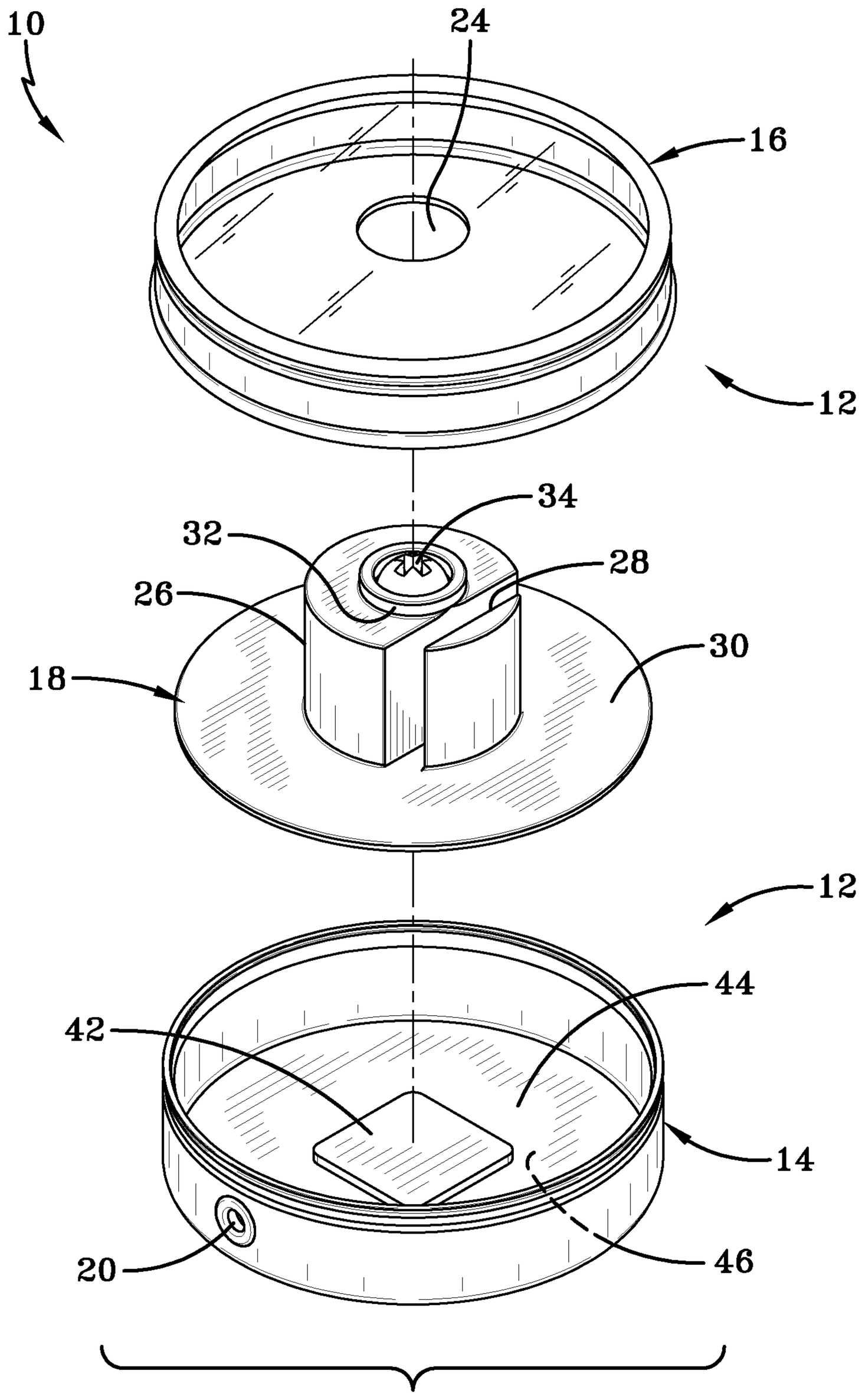


FIG. 2

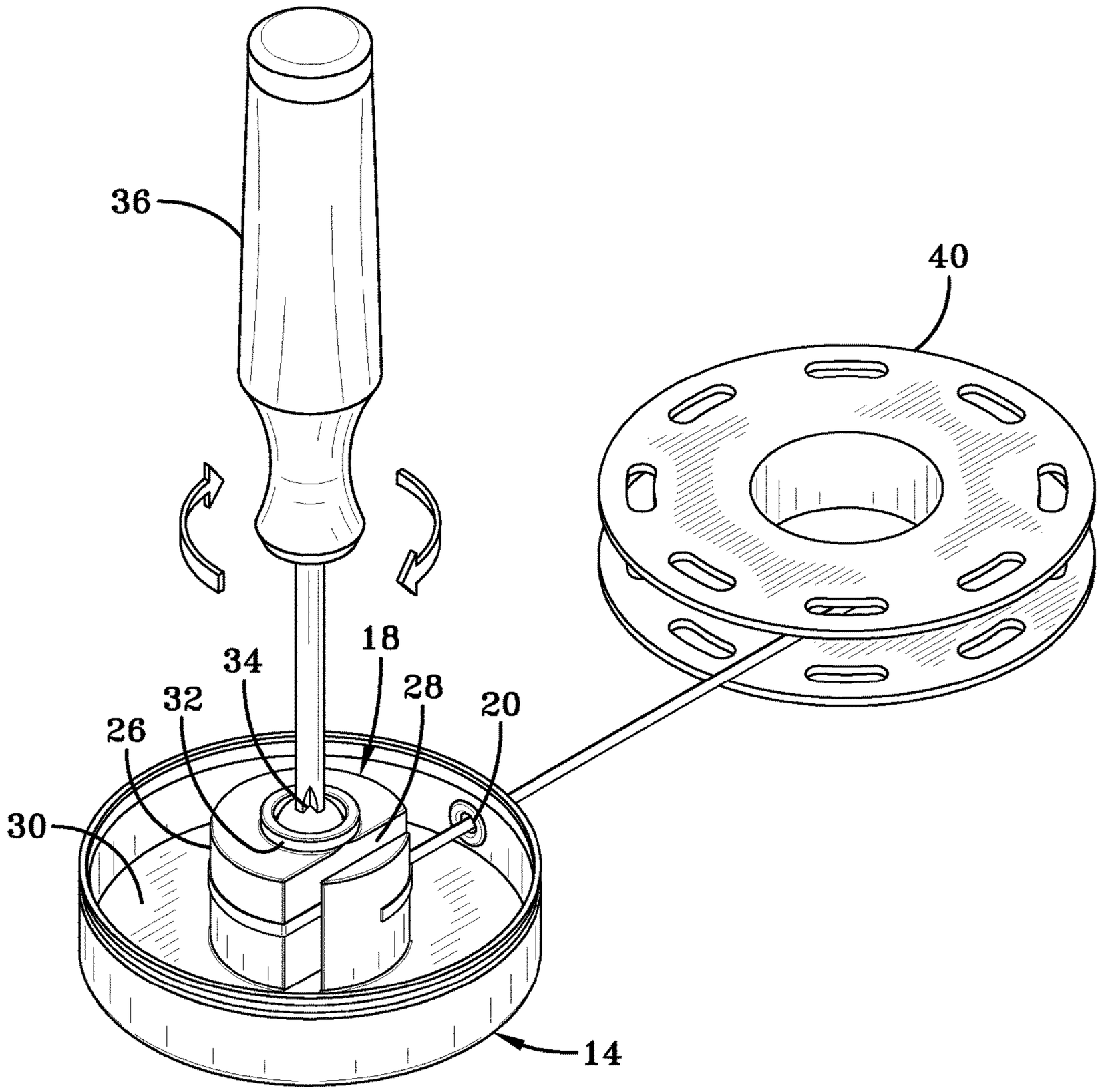


FIG. 3

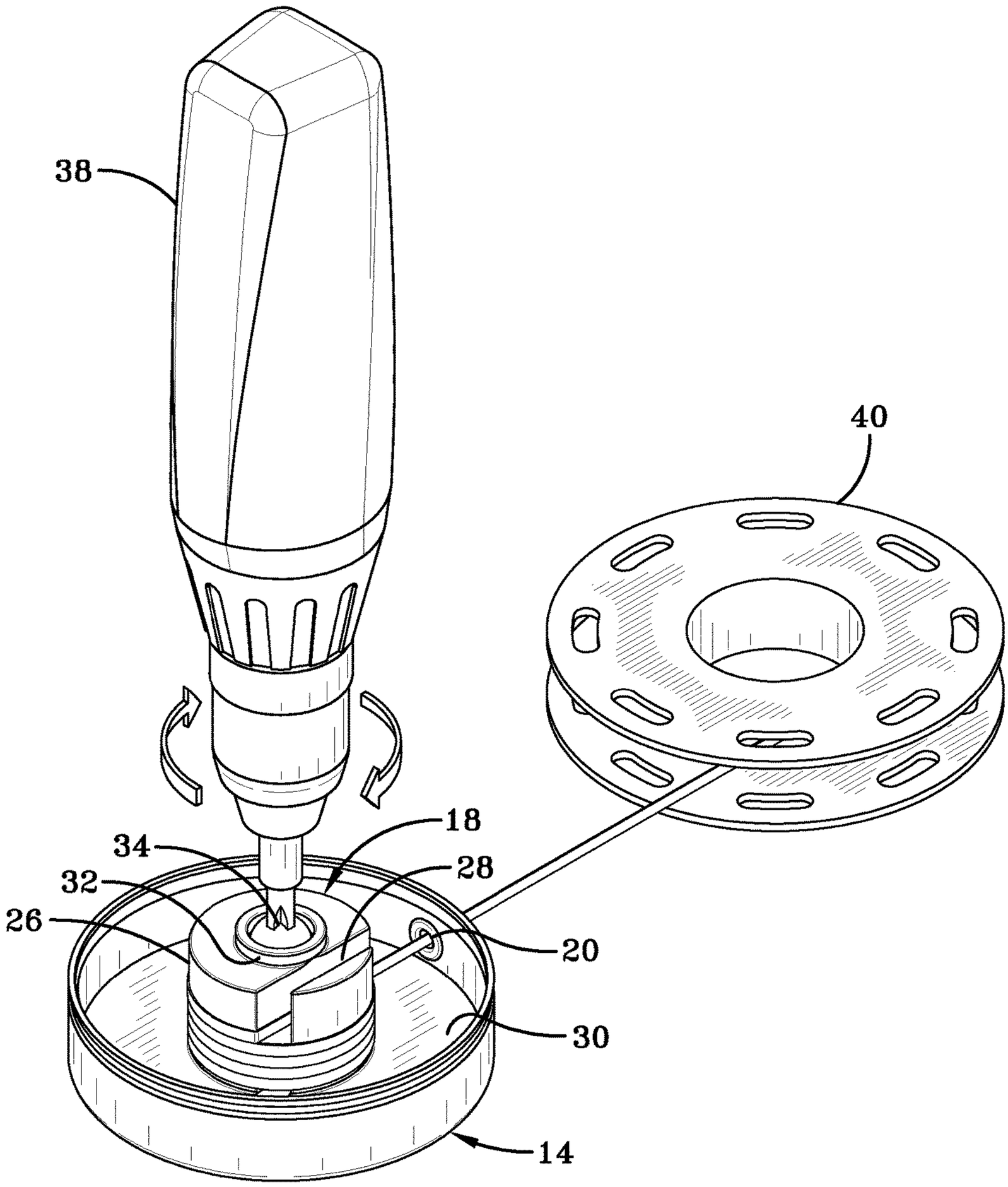


FIG. 4

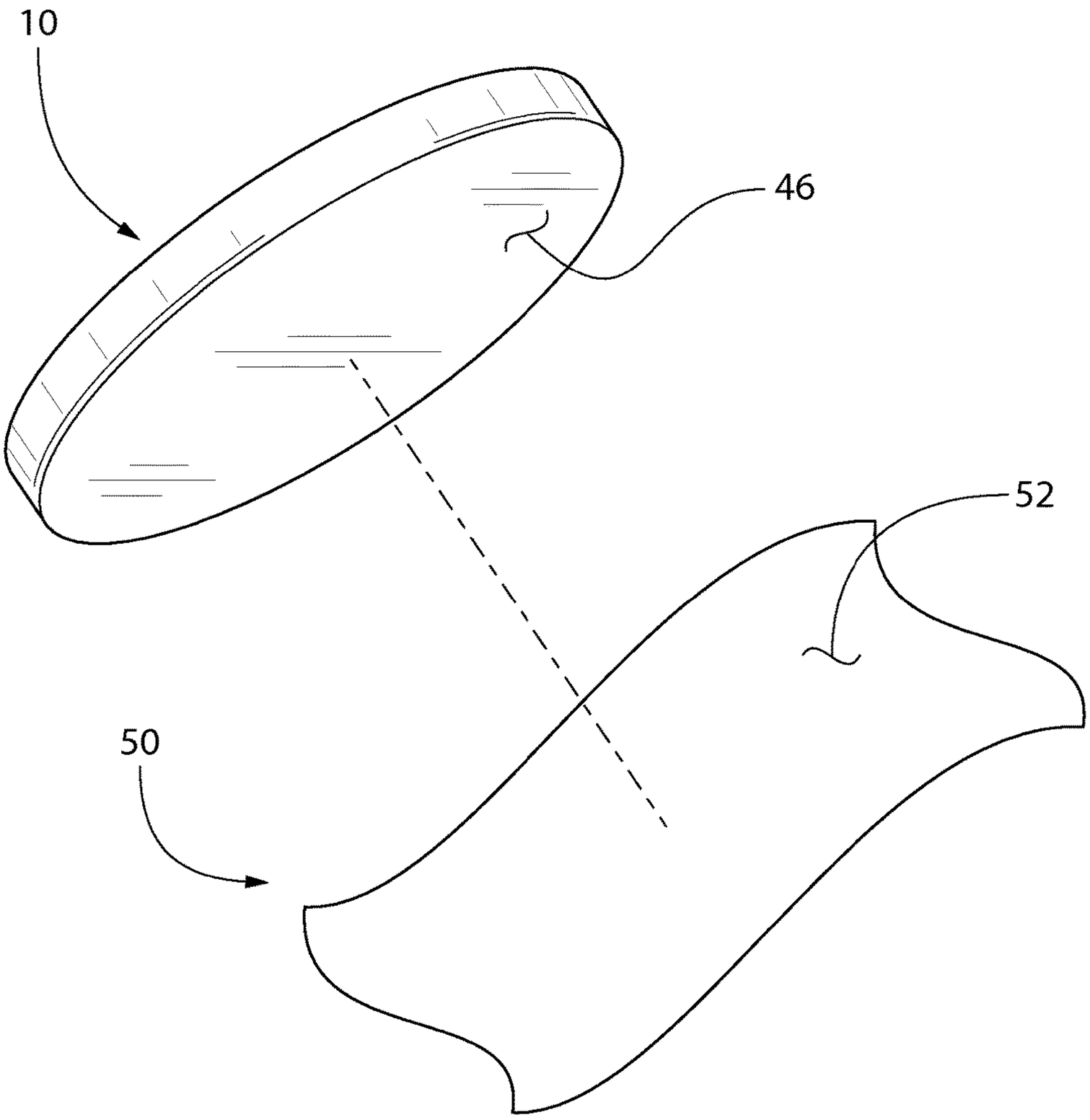


FIG. 5

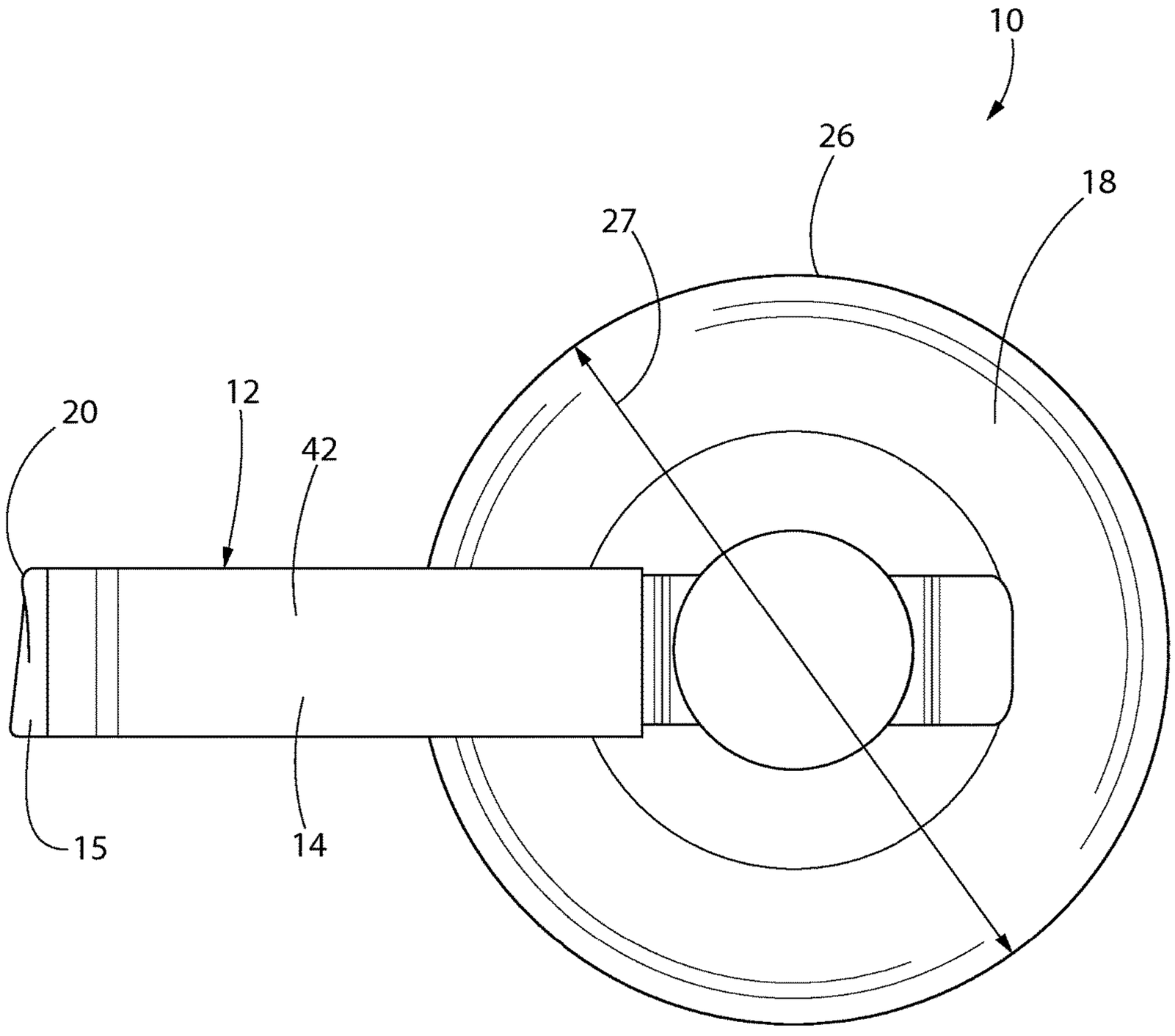


FIG. 6

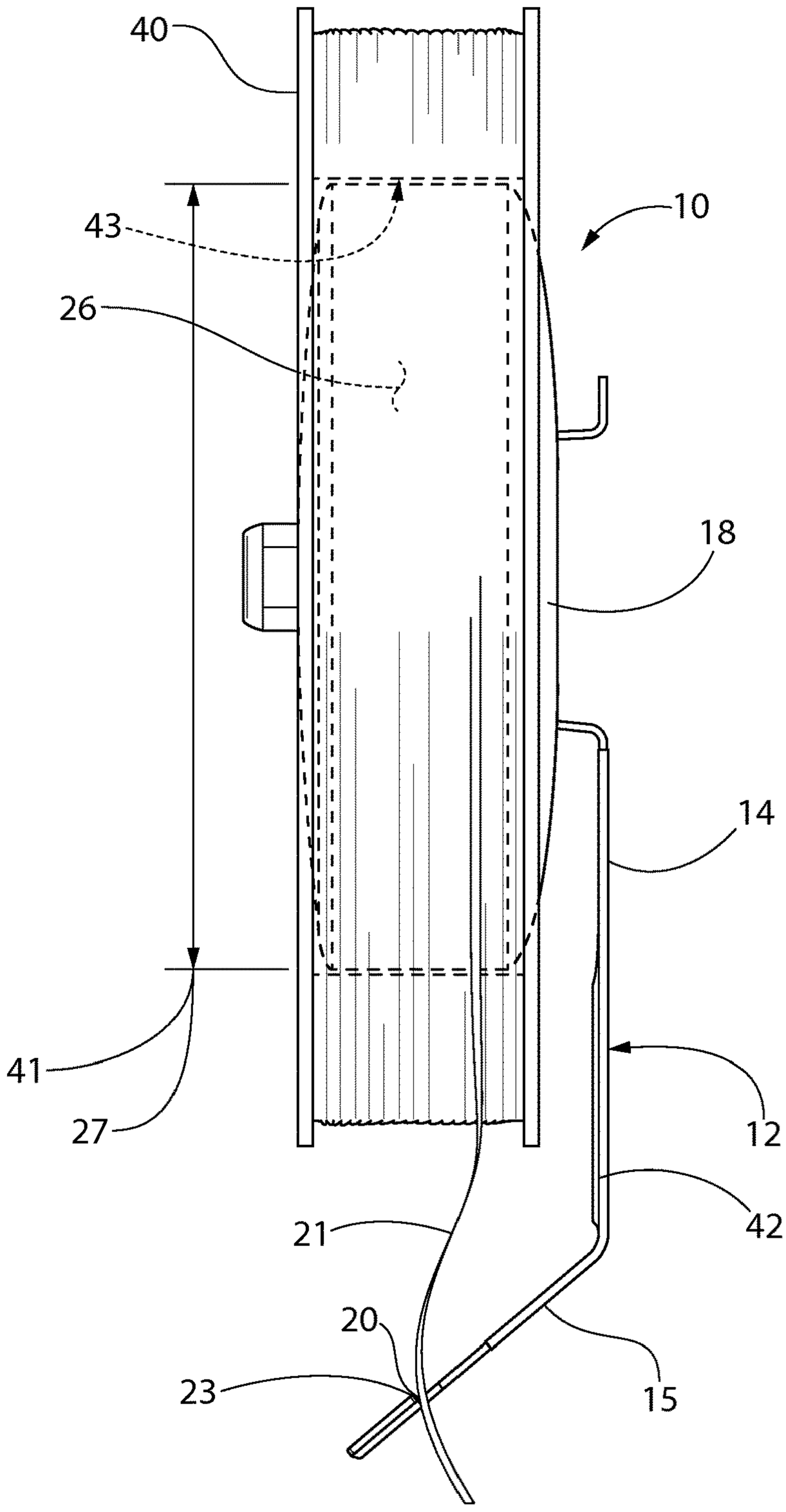


FIG. 7

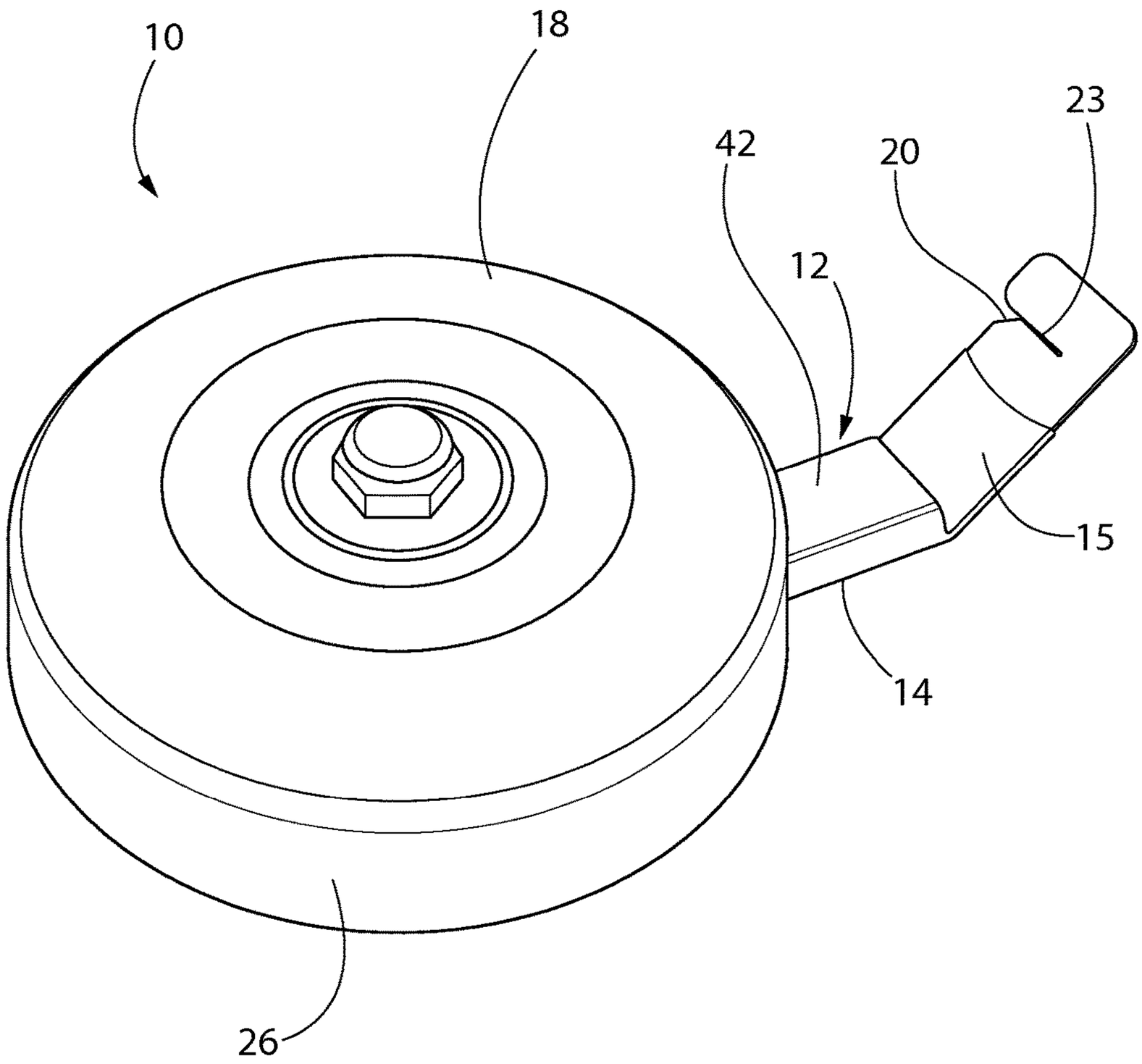


FIG. 8

# TAPE PRODUCT DISPENSER AND METHOD OF USING A TAPE PRODUCT DISPENSER

## RELATED APPLICATION DATA

This application is a continuation application of U.S. application Ser. No. 13/875,798, filed May 2, 2013, which is hereby incorporated in its entirety herein by reference.

## FIELD OF THE INVENTION

The present invention relates to tape product dispensers and methods of using tape product dispensers.

## BACKGROUND OF THE INVENTION

Tape products may include knife tape, thin paint tape, and edge cut tape products that are used for many different purposes. Knife tape and edge cut tape products may be used when applying graphics for advertising or otherwise displaying graphics on signs, automobiles, buildings, and numerous other surfaces. Additionally, vehicle painters, pinstripe installers, and graphics installers use tape products such as thin paint tape and knife tape to precisely apply complicated paint and vinyl graphic designs.

Tape products are typically supplied on a bulk roll. The user must simultaneously unroll and handle the bulk roll while attempting to apply the tape product to a work surface in a desired pattern. However, many applications of tape products require the tape product to be applied using extensive artistic and utilitarian design techniques. Some of these design techniques include the use of curves, swirls, perfectly straight lines, changes in tape direction, including complete reversals of direction over a very tight radius turn, and placement over uneven surfaces, convex and concave curves, overlapping seams, and onto difficult areas to access. Handling of the cumbersome bulk tape roll often hinders the creation and application of these complicated paint, graphic, or other patterns.

Therefore, there remains a need for a tape product dispenser that reduces the handling requirements of the user as the tape product is applied to a work surface. Additionally, a tape product dispenser that can be quickly and securely loaded with a bulk tape product roll is desirable.

## SUMMARY OF THE INVENTION

In accordance with an aspect of the invention, a tape product dispenser is provided comprising a reel member comprising an internal loading surface for loading a tape product and a housing comprising a lower portion and a housing port disposed at a radially outer end of the housing. The lower portion is coupled to the reel member for rotation of the reel member relative to the lower portion.

In accordance with further aspects of the invention, a method of using a tape product dispenser includes providing a reel member comprising an internal loading surface, providing a housing comprising a lower portion and a housing port, placing a tape product spool having a tape product on the internal loading surface, rotating the reel member such that a portion of the tape product extends from the tape product spool in a radially outward direction toward the housing port, and contacting the housing port with the tape product.

## BRIEF DESCRIPTION OF THE DRAWINGS

While the specification concludes with claims particularly pointing out and distinctly claiming the present invention, it is believed that the present invention will be better understood from the following description in conjunction with the accompanying Drawing Figures, in which like reference numerals identify like elements, and wherein:

FIG. **1** is a perspective view of a tape product dispenser according to aspects of the present invention;

FIG. **2** is an exploded perspective view of a tape product dispenser according to aspects of the present invention;

FIG. **3** is a perspective view of a tape product dispenser and one embodiment of engagement of the tape product dispenser according to aspects of the present invention;

FIG. **4** is a perspective view of a tape product dispenser and another embodiment of engagement of the tape product dispenser according to aspects of the present invention;

FIG. **5** is a perspective view of a tape product dispenser and mounting surface according to aspects of the present invention;

FIG. **6** is a bottom plan view of a tape product dispenser according to aspects of the present invention;

FIG. **7** is a side elevation view of a tape product dispenser according to aspects of the present invention; and

FIG. **8** is a perspective view of a tape product dispenser according to aspects of the present invention.

## DETAILED DESCRIPTION OF THE INVENTION

In the following detailed description of the preferred embodiment, reference is made to the accompanying drawings that form a part hereof, and in which is shown by way of illustration, and not by way of limitation, a specific preferred embodiment in which the invention may be practiced. It is to be understood that other embodiments may be utilized and that changes may be made without departing from the spirit and scope of the present invention.

In a preferred embodiment of the present invention, a tape product dispenser is provided to dispense tape products including, but not limited to, knife tape products, thin paint tape products, and edge cut tape products for use by individuals such as vinyl graphic installers, vehicle wrap installers, vehicle painters, vehicle pinstripe artists, and sign painters or designers. The present invention aids in the application of a variety of tape products to various surfaces such as vehicles, indoor substrates, and outdoor substrates.

Reference is now made to FIG. **1**, which shows a tape product dispenser **10** according to aspects of the present invention. The dispenser **10** is shown having a housing **12** comprising a lower portion **14** and an upper portion **16**. The upper portion **16** is configured to be opened to permit access to a reel member **18**. In the preferred embodiment, the housing **12** is in the shape of a cylinder with the upper portion **16** of the housing **12** being a transparent lid. When the upper portion **16** is closed, a transparent lid allows observation of the rotation of the reel member **18** to confirm proper loading of tape product while also providing an indication of the amount of tape product on the reel member **18**. A housing port **20** is shown on the lower portion **14** of the housing **12** in the preferred embodiment of FIG. **1**. The housing port **20** enables dispensing of a tape product from an interior of the housing **12**. Additionally, the housing port **20** enables loading of a tape product from outside of the housing **12** as will be further explained below. As shown in FIG. **1**, the upper portion **16** includes a central opening **24** to allow access to, and rotation of, the reel member **18** from outside of the housing **12** when the dispenser **10** is assembled as shown in FIG. **1**.

Referring now to FIG. **2**, the exploded view of FIG. **2** shows the lower portion **14** and the upper portion **16** of the dispenser **10** cooperating to at least partially enclose the reel member **18**. The reel member **18** includes an internal loading surface **26** onto which a tape product is loaded when the reel member **18** is rotated. The reel member **18** of the preferred embodiment shown in FIG. **2** additionally includes a loading cavity **28** adjacent to the internal loading surface **26**. When a tape product is initially loaded onto the internal loading surface **26**, an end portion of the tape product is placed through the housing port **20** before the end portion of the tape product is placed on a surface of the loading cavity **28** to enable loading of the tape product onto the internal loading surface **26** through rotation of the reel member **18**. The central opening **24** allows the reel member **18** to be rotated with the upper portion **16** of the housing **12** connected with the lower portion **14** to at least partially enclose the reel member **18**. However, reel member **18** may also be rotated with the upper portion **16** removed from the lower portion **14**. FIG. **2** illustrates the loading cavity **28** as a slot that extends through a central cylinder of the reel member **18**. However, the loading cavity **28** may include any surface or cavity designed to initiate loading of the tape product onto the reel member **18** prior to or during rotation of the reel member **18**.

FIG. **2** additionally illustrates a loading flange **30** extending radially outward from the internal loading surface **26**. The loading flange **30** is disposed adjacent to the lower portion **14** of the housing **12** when the dispenser **10** is assembled as shown in the preferred embodiment of FIG. **1**. During loading and dispensing, the loading flange **30** cooperates with the internal loading surface **26** to load and support a tape product on the internal loading surface **26**.

Additionally, FIGS. **1** and **2** of the present invention illustrate a central portion **32** of the reel member **18**. Central portion **32** is also referred to herein as a central protrusion **32**. In the preferred embodiment of the present invention, central protrusion **32** is intended to protrude into the central opening **24** of the upper portion **16** of the housing **12** when the dispenser is assembled as shown in FIG. **1**. The central protrusion **32**, loading flange **30**, internal loading surface **26**, and loading cavity **28** of the reel member **18** are all integrally connected to each other as one machined polymeric piece in the preferred embodiment. However, these integral portions of the reel member **18** may be separately formed and coupled together into a reel member assembly. Additionally, any portion of the reel member **18** may be formed by other manufacturing processes, such as molding, and may be comprised of another material such as wood, metal, composite, or combinations thereof.

The central protrusion **32** and the central opening **24** of the upper portion **16** of the housing **12**, as shown in FIGS. **1** and **2**, cooperate to allow the reel member **18** to be accessed from outside of the housing **12** such that the reel member **18** may be rotated with the upper portion **16** of the housing **12** closed. FIG. **2** shows the central protrusion **32** of the preferred embodiment including a central indentation **34** to enable engagement with a tool to allow rotation of the reel member **18**.

Additionally, FIGS. **3** and **4** further illustrate the central indentation **34** of the preferred embodiment being configured to engage a tool such as a screwdriver **36**, screw gun **38**, or drill **38** to enable rotation of the reel member **18** from outside of the housing **12** when the upper portion **16** is closed. As shown in FIGS. **3** and **4**, the dispenser **10** is quickly and securely loaded with tape product from a bulk roll or spool **40** with the use of a screwdriver **36**, screw gun **38**, or drill **38** to rotate the reel member **18**. In place of a tool engaging the reel member **18**, the reel member **18** of the present invention may include a crank or similar device (not shown) integrally formed with, or coupled to, the reel member **18** to rotate the reel member **18** from outside of the housing **12**. Further, the crank or similar device may be removable or releasably attached to the reel member **18**.



Referring again to the preferred embodiment of FIG. **2**, the lower portion **14** of housing **12** comprises a magnetic member **42**. The magnetic member **42** of the preferred embodiment is a thin rare earth magnet that is fastened to an inside surface **44** of the lower portion **14** of the housing **12**. As illustrated in FIG. **5**, the magnetic member **42** is configured to allow magnetic coupling of the housing **12** to a mounting surface **52**, such as a metallic or magnetic vehicle panel, wrist band, vest, or jacket, represented generally in FIG. **5** at **50**. The outside surface **46** of the lower portion **14** of the housing **12** comprises a low friction material configured to minimize damage to the mounting surface **52** due to contact with the lower portion **14** at the outer surface **46**. In the preferred embodiment, the outer surface **46** of the lower portion **14** includes a fiberglass tape covering, as shown generally in FIG. **5**. Additionally, an outer surface of the reel member **18** may also include a low friction material, such as a fiberglass tape covering, in order to reduce rotational resistance due to friction between the reel member **18** and the inside surfaces of the housing **12**. In place of, or in addition to, the magnetic member **42**, other fastening devices may be utilized to couple the housing **12** to a mounting surface. Such fastening devices may include hook and loop fasteners, adhesives, or mechanical fasteners.

Referring now to FIGS. **6-8**, an embodiment of the tape product dispenser **10** is illustrated in accordance with aspects of the present invention. The dispenser **10** is shown having a housing **12** comprising a lower portion **14** and a termination portion **15**. In an embodiment, the lower portion **14** extends radially outward and the termination portion **15** extends axially from the lower portion **14** relative to the axis of the reel member **18**. As illustrated in the embodiment of FIG. **7**, the termination portion **15** extends both axially and radially. The termination portion **15** may extend only in an axial direction and may include any degree of radial extension. In order to enhance visibility of, and access to, a reel member **18**, no upper portion is included in the embodiment shown in FIGS. **6-8**. A housing port **20** is shown on the lower portion **14** of the housing **12** at the termination portion **15**. The housing port **20** in an embodiment includes a notch to guide tape product **21** during dispensing. In a further embodiment, the housing port **20** includes a cutting edge **23** configured to cut the tape product **21** at a desired point, as illustrated in FIG. **7**.

The reel member **18** includes an internal loading surface **26** for loading a tape product spool **40**. The tape product may be loaded onto the internal loading surface **26** with or without the tape product spool **40** being loaded onto the spool **40**. The lower portion **14** is coupled to the reel member **18** to allow rotation of the reel member **18** relative to the lower portion **14**. In the embodiment illustrated in FIGS. **6-8**, the internal loading surface **26** defines a reel outer diameter **27** substantially equal to a spool inner diameter **41** of a tape product spool **40**. In such an embodiment, an inner surface **43** of the tape product spool **40** is positioned against the reel outer diameter **27**. The reel member **18** illustrated in FIG. **2** may include a diameter equal to the reel outer diameter **27** illustrated in FIG. **6**. Similarly, the reel member **18** of either FIG. **2** or **6** may include a diameter sized to match any spool or bulk roll or any other desired diameter.

In a further embodiment, the tape product dispenser of FIGS. **6-8** includes a magnetic member **42** disposed in or adjacent to the housing **12**. The magnetic member **42** is configured to allow magnetic coupling of the housing **12** to the mounting surface **52**, as discussed with regard to the embodiment illustrated in FIG. **1**. The mounting surface **52** includes any application surface, work surface, or user surface, as discussed in further detail below. The magnetic member **42** is disposed adjacent the lower portion **14** to allow detachable coupling to the mounting surface **52**.

In one or more embodiments, the lower portion **14** may extend to multiple sides of the reel member **18**. As a non-limiting example, the housing **12** includes the lower portion **14** extending radially outward from the reel member **18** in two diametrically opposed directions. In an additional non-limiting example, the housing **12** includes the lower portion **14** extending radially outward from the reel member **18** in four directions, such as at 90 degree intervals. Further, the housing **12** may extend underneath the entire reel member **18** or fully surround the reel member **18** in an embodiment, similar to the structure of the lower portion **14** of FIGS. **1-5**.

Upon dispensing, the tape product is pulled from the dispenser **10**, such as through the housing port **20** or by merely rotating the reel member **18** while pulling the tape product. The relatively open housing **12** of FIGS. **6-8** allows dispensing of the tape product without rotation of the reel member **18**, such as by merely pulling the tape product in an axial direction away from the dispenser **10**. In order to increase dexterity for the user, the lower portion **14** may be magnetically attached to a metallic surface or a user surface, such as the mounting surface **52** illustrated in FIG. **5**, including a vehicle, wrist band, waist, tool pouch, vest, or jacket surface, as the tape product is pulled and applied to a surface, such as an application surface or the mounting surface **52**. Once attached to the mounting surface **52**, the user has complete two-handed access to the tape product so that the tape may be placed onto a work or application surface for unlimited artistic and utilitarian design, including the use of curves, swirls, perfectly straight lines, complete changes in tape direction, and placement over convex and concave curves, overlapping seams, and onto difficult areas to access.

While particular embodiments of the present invention have been illustrated and described, it would be obvious to those skilled in the art that various other changes and modifications can be made without departing from the spirit and scope of the invention. It is therefore intended to cover in the appended claims all such changes and modifications that are within the scope of this invention.

What is claimed is:

**1**. A tape product dispenser, comprising:

a reel member comprising an internal loading surface for loading a tape product; and

a housing, comprising:

a lower portion; and

a housing port disposed at a radially outer end of the housing,

wherein the lower portion is coupled to the reel member for rotation of the reel member relative to the lower portion, wherein the housing includes an axially extending termination portion, the housing port being disposed at the termination portion, and wherein the housing port includes a notch configured to guide the tape product during dispensing of the tape product and a cutting edge configured to cut the tape product at a desired point.

**2**. The tape product dispenser of claim **1**, wherein the internal loading surface defines a reel outer diameter substantially equal to a spool inner diameter of a tape product spool.

**3**. The tape product dispenser of claim **1**, further comprising a tape product spool having an inner surface defining a spool inner diameter, wherein the internal loading surface defines a reel outer diameter, the inner surface of the tape product spool positioned against the reel outer diameter.

**4**. The tape product dispenser of claim **1**, wherein the lower portion extends radially to the termination portion.

**5**. The tape product dispenser of claim **1**, further comprising a tape product spool having an inner surface defining a spool inner diameter, wherein the internal loading surface defines a reel outer diameter, the inner surface of the tape product spool positioned against the reel outer diameter.

**6**. The tape product dispenser of claim **1**, wherein the housing comprises a magnetic member configured to allow magnetic coupling of the housing to a mounting surface.

**7**. The tape product dispenser of claim **6**, wherein the magnetic member is disposed adjacent the lower portion.

**8**. A method of using a tape product dispenser, comprising:

providing a reel member comprising an internal loading surface;

providing a housing comprising:

a lower portion; and

a housing port including a notch configured to guide a tape product during dispensing of the tape product;

placing a tape product spool having a tape product on the internal loading surface;

rotating the reel member such that a portion of the tape product extends from the tape product spool in a radially outward direction toward the housing port; and

contacting the housing port with the tape product, wherein contacting the housing port with the tape product includes cutting the tape product at the housing port.

**9**. The method of claim **8**, further comprising:

providing a magnetic member adjacent the lower portion; and

coupling the housing to a mounting surface with the magnetic member.

**10**. The method of claim **9**, wherein the mounting surface includes a vehicle surface.

**11**. The method of claim **9**, wherein the mounting surface includes a user surface.

**12**. The method of claim **11**, wherein the user surface includes one of a wristband, belt, tool pouch, vest, and jacket surface.

**13**. The method of claim **8**, wherein the internal loading surface comprises an outer diameter substantially equal to an inner diameter of a tape product spool.

**14**. The method of claim **8**, wherein the housing includes an axially extending termination portion, the housing port being disposed at the termination portion.

**15**. The method of claim **14**, wherein the lower portion extends radially to the termination portion.

**16**. A tape product dispenser, comprising:

a reel member comprising an internal loading surface for loading a tape product; and

a housing, comprising:

a lower portion without an upper portion extending between the reel member and a termination portion of the housing, the termination portion extending both axially and radially;

a housing port disposed at a radially outer end of the housing; and

a magnetic member disposed at the lower portion of the housing and configured to allow magnetic coupling of the housing to a mounting surface;

wherein the lower portion is coupled to the reel member for rotation of the reel member relative to the lower portion, wherein the housing port is disposed at the termination portion, and wherein the housing port includes a notch configured to guide the tape product during dispensing of the tape product and a cutting edge configured to cut a tape product at a desired point.

* * * * *